

**REMARKS**

Claims 1 – 40 are pending in the application. Claims 1 – 40 have been rejected. Claims 1, 8, 16, 21, 26, 31 and 36 have been amended. Claims 6 and 13 have been cancelled. No new claims have been added.

Claims 6, 13, and 20 stand rejected under 35 USC. § 112. Claims 1, 8, 16, 21, 26, 31 and 36 which now include similar to the limitations of claims 6, 13, and 20 have been amended to address this rejection.

Claims 1, 8 and 16 stand rejected under 35 USC. § 101. Claims 1, 8 and 16 have been amended to address this rejection.

Claims 1, 8 and 16 stand rejected under Chen, U.S. Patent No. 6,625,807 (Chen). Claims 6 and 13, whose limitations are now substantially incorporated into claims 1, 8 and 16, stand rejected under Chen in view of Applicant's discussion of the executable and linking format (ELF) description set forth on pages 9 and 10 of the specification (the ELF description). Additionally, claims 21, 28 and 36 stand rejected under Chen.

The present invention, as set forth by independent claim 1, relates to a method of producing a binary code file which includes compiling a plurality of source code instructions, and outputting a plurality of binary code instructions and compiler annotation. The plurality of binary code instructions is executable by a processor of a computer system and are an executable and lining format (ELF) binary code file. The compiler annotation is an ELF selection.

The present invention, as set forth by independent claim 8, relates to a method of translating a source binary code file which includes translating a plurality of source binary code instructions utilizing compiler annotation and the outputting a plurality of target binary code instructions. The plurality of source binary code instructions are an executable and lining format (ELF) binary code file and the compiler is an ELF selection. The plurality of target binary code instructions is executable by a processor of a computer system.

The present invention, as set forth by independent claim 16, relates to a binary code file which includes a plurality of binary code instructions and compiler annotation. The compiler annotation enables a binary translator to utilize the compiler annotation to partition the plurality of binary code instructions into sections, functions and basic blocks; and build a control-flow graph utilizing the plurality of binary code instructions and the compiler annotation. The plurality of binary code instructions is executable by a processor of a computer system and the instructions are an executable and lining format (ELF) binary code file. The compiler annotation is an ELF selection.

The present invention, as set forth by independent claim 21, relates to an apparatus for producing a binary code file which includes means for compiling a plurality of source code instructions and means for outputting a plurality of binary code instructions and compiler annotation. The plurality of source binary code instructions are an executable and lining format (ELF) binary code file and the compiler is an ELF selection.

The present invention, as set forth by independent claim 26, relates to an apparatus for translating a source binary code file which includes means for translating a plurality of source binary code instructions utilizing compiler annotation, and means for outputting a plurality of target binary code instructions. The plurality of source binary code instructions are an executable and lining format (ELF) binary code file and the compiler is an ELF selection.

The present invention, as set forth by independent claim 31 relates to an apparatus for producing a binary code file which includes a computer readable medium, and instructions stored on the computer readable medium to compile a plurality of source code instructions, and output a plurality of binary code instructions and compiler annotation. The plurality of source binary code instructions are an executable and lining format (ELF) binary code file and the compiler is an ELF selection.

The present invention, as set forth by independent claim 36, relates to an apparatus for translating a source binary code file which includes a computer readable medium, and instructions stored on the computer readable medium to translate a plurality of source binary code instructions utilizing compiler annotation, and output a plurality of target binary code

instructions. The plurality of source binary code instructions are an executable and linking format (ELF) binary code file and the compiler is an ELF selection.

Chen discloses a method for register optimization during code translation and utilizes a technique that removes the time overhead for analyzing register usage and eliminates fixed restraints on the compiler register usage. The method for register optimization utilizes a compiler to produce a bit vector for each program unit (i.e., subroutine, function, and/or procedure). Each bit in the bit vector represents a particular caller-saved register. A bit is set if the compiler uses the corresponding register within that program unit. During the translation, the translator examines the bit vector to very quickly determine which registers are free, and therefore can be used during register optimization without having to save and restore the register values.

The ELF description as set forth on pages 9 and 10 of Applicants' specification sets forth the file format of an executable and linking format (ELF) executable binary file. Applicant's specification does not disclose or suggest using an ELF binary file to provide compiler annotation to an executable binary code file.

Chen and the ELF description, taken alone or in combination, do not teach or a method of producing a binary code file which includes compiling a plurality of source code instructions, and outputting a plurality of binary code instructions and compiler annotation wherein *the plurality of binary code instructions is executable by a processor of a computer system and are an executable and linking format (ELF) binary code file and the compiler annotation is an ELF selection*, all as required by claim 1. Accordingly, claim 1 is allowable over Chen and the ELF description. Claims 2 - 7 depend from claim 1 and are allowable for at least this reason.

Chen and the ELF description, taken alone or in combination, do not teach or suggest a method of translating a source binary code file which includes translating a plurality of source binary code instructions utilizing compiler annotation and the outputting a plurality of target binary code instructions wherein the plurality of source binary code instructions are *an executable and linking format (ELF) binary code file* and the compiler is *an ELF selection* and the plurality of target binary code instructions is executable by a processor of a computer system, all

as required by claim 8. Accordingly, claim 8 is allowable over Chen and the ELF description. Claims 9 - 15 depend from claim 8 and are allowable for at least this reason.

Chen and the ELF description, taken alone or in combination, do not teach or suggest a binary code file which includes a plurality of binary code instructions and compiler annotation where the plurality of binary code instructions are *an executable and lining format (ELF) binary code file* and the compiler annotation is *an ELF selection*, all as required by claim 16. Accordingly, claim 16 is allowable over Chen and the ELF description. Claims 17 - 20 depend from claim 16 and are allowable for at least this reason.

Chen and the ELF description, taken alone or in combination, do not teach or suggest an apparatus for producing a binary code file which includes means for outputting a plurality of binary code instructions and compiler annotation wherein the plurality of source binary code instructions are *an executable and lining format (ELF) binary code file* and the compiler is *an ELF selection*, all as required by claim 21. Accordingly, claim 21 is allowable over Chen and the ELF description. Claims 22 - 25 depend from claim 21 and are allowable for at least this reason.

Chen and the ELF description, taken alone or in combination, do not teach or suggest an apparatus for translating a source binary code file which includes means for translating a plurality of source binary code instructions utilizing compiler annotation, and means for outputting a plurality of target binary code instructions wherein *the plurality of source binary code instructions are an executable and lining format (ELF) binary code file and the compiler is an ELF selection* all as required by claim 26. Accordingly, claim 26 is allowable over Chen and the ELF description. Claims 27 - 30 depend from claim 26 and are allowable for at least this reason.

Chen and the ELF description, taken alone or in combination, do not teach or suggest an apparatus for producing a binary code file which includes instructions stored on a computer readable medium to compile a plurality of source code instructions, and output a plurality of binary code instructions and compiler annotation wherein *the plurality of source binary code instructions are an executable and lining format (ELF) binary code file* and the compiler is *an ELF selection*, all as required by claim 31. Accordingly, claim 31 is allowable over Chen and

the ELF description. Claims 32 - 35 depend from claim 31 and are allowable for at least this reason.

Chen and the ELF description, taken alone or in combination, do not teach or suggest an apparatus for translating a source binary code file which includes instructions stored on a computer readable medium to translate a plurality of source binary code instructions utilizing compiler annotation, and output a plurality of target binary code instructions wherein *the plurality of source binary code instructions are an executable and lining format (ELF) binary code file* and the compiler is *an ELF selection*, all as required by claim 36. Accordingly, claim 36 is allowable over Chen and the ELF description. Claims 37 - 40 depend from claim 36 and are allowable for at least this reason.

Additionally, applicants respectfully submit that the combination of Chen and ELF is improper because Chen and ELF because Chen and ELF fail to provide a suggestion to be combined and have been combined with the benefit of hindsight.

Neither Chen or ELF provide a suggestion to be combined.

The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. Wilson and Hendrix fail to suggest any motivation for, or desirability of, the changes espoused by the Examiner and endorsed by the Board.

Here, the Examiner relied upon hindsight to arrive at the determination of obviousness. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fritch*, 23 USPQ 2d at 1783-84 (quoting *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)).

Further, it appears that the rejection of claims 1 - 40 is based on an improper hindsight-based obviousness analysis. In this regard, it must be recognized that hindsight reconstruction of claims based on disparate aspects of the prior art may not be employed as a valid basis for the rejection of those claims. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303, 312-313 (Fed. Cir. 1983); *Panduit Corp. v. Dennison Manufacturing Co.*, 1 USPQ2d 1593, 1595-1596 (Fed. Cir. 1987). Furthermore, an obviousness determination requires that the invention as

*a whole* would have been obvious to a person having ordinary skill in the art. *Connell v. Sears Roebuck & Co.*, 220 USPQ 193 (Fed. Cir. 1983).

To establish obviousness based on a combination of elements disclosed in the prior art or a modification of the prior art, there must be some motivation, suggestion or teaching of the desirability of making the claimed invention. *See In re Dance*, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984). The motivation, suggestion or teaching to modify references may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved. *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Whether the Office Action relies on an express or implicit showing of a motivation or suggestion to modify or combine references, it must provide particular findings related thereto. *In re Dembiczak*, 50 USPQ2d at 1617. Broad conclusory statements standing alone are not "evidence." *Id.* Thus, the Office Action must include particular *factual findings* that support an assertion that a skilled artisan would have modified the express disclosure of Chen to develop the invention recited by independent claims 1, 8, 16, 21, 26, 31 and 36. *See In re Kotzab*, 55 USPQ2d 1313, 1317. Applicant is unable to discern the requisite factual basis in Chen, ELF or the Office Action.

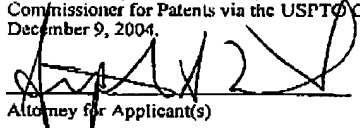
In this regard, the Office Action appears to have engaged in a hindsight-based obviousness analysis condemned by the Federal Circuit. To prevent a hindsight-based obviousness analysis, the Federal Circuit has clearly established that the relevant inquiry for determining the scope and content of the prior art is whether there is a reason, suggestion, or motivation in the prior art or elsewhere that would have led one of ordinary skill in the art to combine or modify references. *See Ruiz v. A.B. Chance Co.*, 57 USPQ2d 1161, 1167 (Fed. Cir. 2000); *see also In Re Rouffet*, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("[T]he Board must identify specifically ... the reasons one of ordinary skill in the art would have been motivated to select the references and combine them to render the claimed invention obvious."). Applicant can detect, and the Office Action has pointed to, no motivation or suggestion that would prompt someone of ordinary in the art to look to Chen in combination for a solution to the problem addressed by Applicant's invention. Such a determination that there is a suggestion or motivation to modify Chen is a factual finding that is prerequisite to an ultimate conclusion of

obviousness. *Sibia Neurosciences, Inc. v. Cadus Pharma. Corp.*, 55 USPQ2d 1927, 1931 (Fed. Cir. 2000). Applicant respectfully submits that the Office Action is devoid of such a finding.

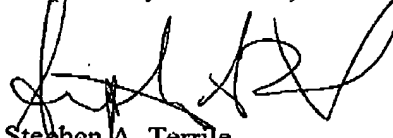
Without such a finding, a *prima facie* case of obviousness in rejecting claims 1- 40 under 35 U.S.C. § 103(a) based on Chen has not been made. For this further reason, Applicant respectfully submits that claims 1 - 40 are patentable over Chen and the ELF description and Applicant respectfully requests the Examiner to remove the rejections of claims 1, 8, 16, 21, 26, 31 and 36 and the claims depending therefrom.

### CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the examiner is requested to telephone the undersigned.

I hereby certify that this correspondence is being sent to the Commissioner for Patents via the USPTO Central Facsimile on December 9, 2004.	
	12/9/04
Attorney for Applicant(s)	Date of Signature

Respectfully submitted,

  
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